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TITLE: Emulsifier for use in cosmetics and foodstuffs, contains  
Lactobacillus-fermented rice obtained in absence of salt,  
as active ingredient

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ABSTRACTED-PUB-NO: JP2001212445A

BASIC-ABSTRACT:

NOVELTY - An emulsifier contains Lactobacillus-fermented rice, as active ingredient, which is obtained by fermenting rice using Lactobacillus, in absence of salt.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the cosmetics which are blended with the emulsifier.

USE - For use in emulsification of cosmetics and foodstuffs.

ADVANTAGE - The emulsifier provides favorable and prolonged emulsification effect, and extremely less skin irritation, as it has very low toxicity. Hence, the emulsifier is safe to humans. The emulsifier is widely utilized in cosmetics and foodstuffs. The emulsifier additionally utilizing the thickener, has much improved emulsion stability. The cosmetics blended with the emulsifier, have favorable texture, and excellent emulsion stability and safety.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: EMULSION COSMETIC FOOD CONTAIN LACTOBACILLUS  
FERMENTATION RICE  
OBTAIN ABSENCE SALT ACTIVE INGREDIENT

DERWENT-CLASS: A97 D13 D16 D21

CPI-CODES: A12-V04; D03-L; D05-C; D08-B13;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1]

018 ; G3703 G3623 P0599 D01 ; R16377 D01 P0599 G3623 ; R24036 G3623  
D01 D03 D05 D11 D10 D23 D22 D24 D31 D32 D42 D46 D50 D60 D76 D86  
D92 F24 F27 F29 F26 F34 F60 H0293 P0599 ; R01866 D01 D23 D22 D31  
D42 D50 D60 D76 D86 F24 F28 F26 F34 F36 F35 H0293 P0599 G3623 ;  
R24070 G3623 P0599 D01

Polymer Index [1.2]

018 ; ND01 ; K9745\*R ; Q9999 Q9110 ; Q9999 Q9165\*R ; Q9999 Q9176  
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SECONDARY-ACC-NO:

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CLAIMS

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[Claim(s)]

[Claim 1] The emulsifier with which salt becomes considering the lactic-acid-bacteria fermentation rice which rice is fermented with lactic acid bacteria and obtained under the condition which does not exist substantially as a subject.

[Claim 2] The emulsifier which comes to contain lactic-acid-bacteria fermentation U.S. with which salt ferments rice with lactic acid bacteria, and is obtained under the condition which does not exist substantially, and a thickener.

[Claim 3] The emulsifier of claim 2 chosen from the group which a thickener becomes from hyaluronic acid or its derivative, xanthan gum, and a tragacanth gum.

[Claim 4] The emulsifier of claim 2 with which a thickener is obtained from a fucus, green algae, or a rhodophyta.

[Claim 5] The emulsifier of claim 4 chosen from the group which a thickener becomes from an alginic acid, an agar, a carrageenan, and a fucoidan.

[Claim 6] Cosmetics which come to blend the emulsifier of claim 1 or claim 2.

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[Translation done.]

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** This invention has a good emulsification operation, moreover is excellent in the safety to the body -- there are few skin stimuli -- with low toxicity, is used for emulsification of cosmetics or food, especially cosmetics, and relates to the cosmetics which come to blend this emulsifier with a suitable emulsifier and a list.

**[0002]**

**[Description of the Prior Art]** Conventionally, nonionic surface active agents, such as polyoxyethylene alkyl ether and sorbitan fatty-acid partial ester, are mainly used for emulsification in cosmetics. however, these surfactants -- the difference of extent -- that -- although to emulsify without not avoiding the stimulation to the skin, reducing the amount of the surfactant used as much as possible for this reason and using this depending on the case is tried, it is in the inclination which produces a problem in respect of the homogeneity of emulsification, stability, etc., and what may not necessarily be satisfied is not obtained.

**[0003]** On the other hand, although preparing the high emulsification object of safety to the skin by using natural product origin components, such as a saponin, lecithin, and stevioside, as an emulsifier is proposed and the part is put in practical use actually, there is a field which is hard to be referred to as not necessarily enough in respect of emulsion stability, the feeling of use at the time of cutaneous administration, the ease of manufacture, etc., and the emulsifier of those solved new natural product origins is called for.

**[0004]** This invention is made in view of the trouble of the conventional technique like \*\*\*\*, the place made into the purpose is equipped with the good emulsification force, and it is in offering the emulsifier of the natural product origin which gives an emulsification object stable for a long period of time. Other purposes of this invention are manufactured considering a natural product as a raw material, are low toxicity, and there are few stimuli to the skin and they are to offer the emulsifier which was extremely excellent in the safety to the body. The purpose of further others of this invention is to offer the emulsifier of the natural product origin which gives emulsification mold cosmetics excellent in the feeling of use at the time of cutaneous administration. The unsatisfactory purpose of this invention is to offer the cosmetics which came to blend an above-mentioned emulsifier and were excellent in safety and a feeling of use.

**[0005]**

**[Means for Solving the Problem]** That is, this invention relates the lactic-acid-bacteria fermentation rice which rice is fermented with lactic acid bacteria and obtained in the first place under the condition in which salt does not exist substantially to the emulsifier which becomes as a subject. Although the emulsifier of this this invention shows the emulsification force and emulsion stability practically sufficient by independent [ its ], it can make emulsion stability improve further by combining a thickener with this further. Therefore, this invention relates to the emulsifier which comes to contain lactic-acid-bacteria fermentation U.S. with which salt ferments rice with lactic acid bacteria, and is

obtained [ second ] under the condition which does not exist substantially, and a thickener. Furthermore, this invention relates to the cosmetics which come to blend these emulsifiers.

[0006] Although using the rice powder obtained by carrying out dehydration desiccation about the lactic-acid-bacteria fermentation object of rice after carrying out lactic-acid fermentation of the rice under existence of salt for upgrading of solid-state food, such as a pan and a cake, is known, the rice powder obtained here is very deficient in the emulsification force, and cannot be used for it as an emulsifier as it is later shown in the example of a trial. Moreover, although it is well-known to prepare low protein, a low potassium, and low Lynn rice by carrying out lactic-acid-bacteria fermentation of the rice under existence of a saccharide, nothing is known about the emulsification ability of the lactic-acid-bacteria fermentation rice obtained here. Therefore, it cannot just be going to expect that the lactic-acid-bacteria fermentation rice of this invention can serve as an outstanding emulsifier from these well-known facts at all.

[0007] Hereafter, this invention is explained to a detail. Although the rice used as a raw material by this invention may be any, such as brown rice, rice cleaning, and processing rice, and there is especially no limit, generally rice cleaning or processing rice is used. Both an oryzae semen and glutinous rice can be used as a class of rice. Moreover, as processing rice, there are antiallergic rice, low protein rice (for example, low GURITERIN rice), enriched rice (for example, gamma-aminobutyric acid rice), etc., and it can be used according to the purpose of using an emulsifier, the candidate for application, etc., being able to choose those either.

[0008] As lactic acid bacteria used for the fermentation of these raw material rice For example, *Lactobacillus Planter ram* (*Lactobacillus plantarum*), *Lactobacillus Brevis* (*L. brevis*), *Lactobacillus KAZEI* (*L. casei*), *Lactobacillus Cello BIOZASU* (*L. cellobiosus*), *Lactobacillus BASHINOSUTERUKASU* (*L. vaccinostercus*), *streptococcus FEKARISU* (*Streptococcus faecalis*), *bacillus* Although there is a *KOAGYU lance* (*Bacillus coagulans*) etc. From the point of the emulsification ability of the lactic-acid-bacteria fermentation rice obtained to *Lactobacillus* Especially use of a planter ram (*Lactobacillus plantarum*) is desirable.

[0009] Fermentation of the rice by these lactic acid bacteria is performed by [ as being the following ]. The saprophytic bacteria first acting as [ give proper means, such as rice cleaning, to rice and ] the failure of lactic-acid-bacteria fermentation are removed. This rice is immersed in the purified water of an amount those one to 5 times, 1 - 4 % of the weight of sugar and 107-108 lactic acid bacteria/ml are added to this, and fermentation is made to perform for one - seven days near the optimum fermentation temperature of the used lactic acid bacteria under an anaerobic condition. As sugar, although a glucose, a fructose, a galactose, a shoe cross, etc. are used, use of a fructose is the most desirable especially.

[0010] In this invention, it is important to perform the above-mentioned lactic-acid fermentation to the bottom of the condition in which salt does not exist substantially. If it ferments under existence of salt, the emulsification force of the lactic-acid-bacteria fermentation rice obtained will decline remarkably. Although the conditions in which salt does not exist substantially here change with the class of lactic acid bacteria to be used, classes, additions of sugar, etc., they mean making it the salt concentration in fermentation liquid become 0.5 or less % of the weight especially preferably 2 or less % of the weight.

[0011] The liquid containing the lactic-acid-bacteria fermentation rice obtained by the above-mentioned fermentation process grinds this as it is, after having condensed as occasion demands, and using as an emulsifier, or isolating preparatively and rinsing lactic-acid-bacteria fermentation rice generally and performing moisture adjustment when requiring, it carries out disintegration using proper means, such as an air-current grinder, and if still more nearly required, it will perform desiccation processing and will offer it as an emulsifier.

[0012] The emulsifier which consists of lactic-acid-bacteria fermentation rice of this invention can make the stability of an emulsification object improve further by having the emulsification force it is weak enough by independent [ its ], and combining and using a thickener for this further, although an emulsification object shows good emulsion stability.

[0013] As a thickener, what is used for the object for cosmetics or a food grade is usable, for example, synthetic macromolecules, such as cellulosics, such as gums, such as polysaccharide, such as fuci, such

as an alginic acid, an agar, a carrageenan, and a fucoidan, green algae or a component of the rhodophyta origin, pectin, and locust bean gum, xanthan gum, a tragacanth gum, and guar gum, a carboxymethyl cellulose, and hydroxyethyl cellulose, polyvinyl alcohol, a polyvinyl pyrrolidone, a carboxyvinyl polymer, and an acrylic acid, a methacrylic-acid copolymer, hyaluronic acid, or its derivative be mentioned. Also among them, from a viewpoint of not spoiling emulsion stability and the safety which is the features of the lactic-acid-bacteria fermentation rice of this invention further, especially, use of hyaluronic acid or its derivative, xanthan gum, or a tragacanth gum is desirable, and can also use suitably the component of fuci, such as an alginic acid, an agar, a carrageenan, and a fucoidan, green algae, or the rhodophyta origin.

[0014] Although the amount of the above-mentioned thickener used to lactic-acid-bacteria fermentation rice changes also with classes of thickener to be used, generally, to the solid content 100 weight section of lactic-acid-bacteria fermentation rice, it takes into consideration the range of the 1 - 100 weight section, the application of the emulsification object which is the range of 5 - 50 weight section preferably, and is made into the purpose from this range, a military requirement, etc. by solid content, and chooses the optimal thing.

[0015] the time of mixing a thickener with lactic-acid-bacteria fermentation rice beforehand by the predetermined ratio, and emulsifying with lactic-acid-bacteria fermentation rice -- the addition front stirrup of this emulsifier -- after -- or you may make it add in this emulsifier, simultaneously an emulsification system Depending on the case, it can also add after emulsification.

[0016] Furthermore, carrying out little concomitant use of the existing emulsifier, for example, sucrose fatty acid ester, a glycerine fatty acid ester, a sorbitan fatty acid ester, lecithin, the saponin, etc. in the range which does not spoil the property of the emulsifier of this invention does not interfere.

[0017] The emulsifier of this invention which consists of lactic-acid-bacteria fermentation rice or lactic-acid-bacteria fermentation rice, and a thickener uses [ have the good emulsification force, while giving the emulsification object which was rich in emulsion stability, excel in the safety to the body -- stimulative / over the skin / is very low -- at low toxicity, and ] for preparation of the various emulsification objects in cosmetics or the food field and is useful. Moreover, it can be used also for the emulsification in fields, such as drugs and agricultural chemicals, in addition to cosmetics and food. Especially, when this is applied to \*\*\*\*\*, the feel over the skin of the cosmetics obtained also has the advantage of being good. Therefore, according to this invention, the safety and the cosmetics excellent in a feeling of use which contain lactic-acid-bacteria fermentation rice or above-mentioned lactic-acid-bacteria fermentation rice, and an above-mentioned thickener as an emulsifier are offered.

[0018] Although a milky lotion, a cream, a lotion, a shampoo, a rinse, a hair treatment, makeup press powder, etc. are mentioned as cosmetics which can apply the emulsifier of this invention and mayonnaise, margarine, a pan, a cake, etc. are mentioned as food for example, again, of course, it is not limited to these.

[0019] Although the loadings to the cosmetics change with classes of cosmetics etc. when applying the emulsifier of this invention to cosmetics In in the case of the emulsifier which consists of lactic-acid-bacteria fermentation rice being 2 - 10% of the weight of the range preferably 0.5 to 20% of the weight as solid content and combining and using lactic-acid-bacteria fermentation rice and a thickener generally Generally as lactic-acid-bacteria fermentation rice, it is good to make it become 1 - 8% of the weight of loadings preferably 0.3 to 15% of the weight. If there is an inclination which will become inadequate [ the emulsification force and emulsion stability ] if loadings are less than the above-mentioned range and it blends across the above-mentioned range on the other hand, the viscosity at the time of emulsification may become high, and a uniform emulsification object may become difficult to get.

[0020] When preparing the cosmetics which blended the emulsifier of this invention, as a component which constitutes these cosmetics, the oily component and moisturizer which are usually used, a preservation-from-decay germicide, a fine-particles component, an ultraviolet ray absorbent, an anti-oxidant, coloring matter, perfume, a skin active ingredient, etc. can be used.

[0021] As an oily component here Olive oil, jojoba oil, castor oil, soybean oil, The fats and oils of the animal origins, such as oil; mink oils of the vegetable origin, such as palm oil, palm oil, and a cacao oil,

and a turtle oil; Yellow bees wax, Lows, such as a carnauba wax and lanolin; A liquid paraffin, vaseline, Hydrocarbons, such as paraffin wax and squalane; A myristic acid, a palmitic acid, Fatty acids, such as stearin acid, oleic acid, and isostearic acid; Lauryl alcohol, Higher alcohol, such as cetanol and stearyl alcohol; synthetic ester and synthetic triglyceride, such as myristic-acid isopropyl, palmitic-acid isopropyl, butyl oleate, and 2-ethylhexyl glyceride, are mentioned.

[0022] As a moisturizer, there are a glycerol, propylene glycol, dipropylene glycol, a 1,3-butylene glycol, a polyethylene glycol, a sorbitol, pyrrolidone carboxylate, etc., for example, and a saccharide, a lactic acid, a urea, various amino acid, and those derivatives are mentioned further.

[0023] As a preservation-from-decay germicide, p-hydroxybenzoic-esters; phenoxyethanol, such as a urea, methyl parahydroxybenzoate, ethyl p-hydroxybenzoate, propyl parahydroxybenzoate, and butyl parahydroxybenzoate, dichlorophen, hexachlorophene, chlorhexidine hydrochloride, a benzalkonium chloride, a salicylic acid, ethanol, undecylenic acid, phenols, Jamal (imidazo denier urea), etc. have, for example.

[0024] As a fine-particles component, a sericite, titanium oxide, talc, a kaolin, a bentonite, a zinc oxide, a magnesium carbonate, magnesium oxide, a zirconium dioxide, a barium sulfate, a silicic acid anhydride, a mica, nylon powder, silk powder, etc. are mentioned, for example.

[0025] As an ultraviolet ray absorbent, there are a p-aminobenzoic-acid ethyl, PARAJI methylamino benzoic-acid ethylhexyl, amyl salicylate and its derivative, PARAMETOKISHI cinnamic acid ethylhexyl, cinnamic acid octyl, 2,4-dihydroxy benzophenone, and 2-hydroxy-4-methoxybenzophenone-5-sulfonate, 2-(2-hydroxy-5-methylphenyl) benzotriazol, urocanic acid, urocanic acid ethyl, etc., for example.

[0026] As an anti-oxidant, butylhydroxyanisole, JIBUCHIRU hydroxytoluene, propyl gallate, vitamin E, its derivative, etc. exist, for example.

[0027] As a skin active ingredient, kojic acid and its derivative, an ascorbic acid and its derivative, arbutin, ellagic acid, a resorcinol derivative, Mulberry bark extract, a creeping saxifrage extract, a rice bran extract, a 2,5-dihydroxybenzoic acid derivative, etc. are mentioned as a whitening component, and a placenta extract, a nicotinic acid and its derivative, vitamin E and its derivative, alpha-hydroxy acids, diisopropylamine dichloro acetate, gamma-amino-beta-hydroxybutyric acid, etc. are mentioned as skin aging prevention and a surface deterioration improvement component, for example.

[0028] As the above-mentioned kojic acid derivative, for example Kojic acid monobutylate, a kojic acid MONOKA plate, Kojic acid monopalmitate, a kojic acid Djibouti rate, etc. as an ascorbic-acid derivative For example, L-ascorbic acid-2-phosphoric ester sodium, L-ascorbic acid-2-phosphoric ester magnesium, L-ascorbic acid-2-sulfate sodium, L-ascorbic acid-2-sulfate magnesium, L-ascorbic acid-2-glycoside (2-O-alpha-D-glucopyranosyl-L-ascorbic acid), L-ascorbic acid-5-glycoside (5-O-alpha-D-glucopyranosyl-L-ascorbic acid) etc. as a resorcinol derivative 4-n-butyl resorcinol, 4-isoamylresorcinol, etc. for example, as a 2,5-dihydroxybenzoic acid derivative A 2,5-diacetoxy benzoic acid, a 2-acetoxy-5-hydroxybenzoic acid, a 2-hydroxy-5-propionyloxy benzoic acid, etc. for example, as a nicotinic-acid derivative For example, as a vitamin-E derivative, there have vitamin-E nicotinate, vitamin-E RINORETO, etc., and a lactic acid, a citric acid, an alpha-hydroxy octanoic acid, etc. have nicotinamide, nicotinic-acid benzyl, etc. as alpha-hydroxy acids, for example.

[0029] Although an example, the example of a formula, and the example of a trial are given and this invention is explained still more concretely hereafter, this invention is not limited to them. In addition, % and the section mean weight % and the weight section below, respectively.

[0030]

[Example 1] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice (1) 10kg of polished rice was rinsed, it put into the fermentation tank with 40kg of liquid which made water distribute fructose 2% and lactic acid bacteria (*L. plantarum* 108 piece/ml), and lactic-acid fermentation was performed for three days at 37 degrees C to the bottom of nitrogen-gas-atmosphere mind. After fermentation termination, after it rinsed fermentation rice and the air-current grinder ground this except for the lactic acid, the fluidized-bed-drying machine adjusted for 13% or less of moisture, and the end of lactic-acid-bacteria fermentation rice powder was obtained.

[0031]

[Example 2] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice (2) As rice, replaced with polished rice, and low allergy rice (trade name: fine rice) was used, and also, similarly the end of lactic-acid-bacteria fermentation rice powder was obtained like the example 1.

[0032]

[Example 3] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice (3) As lactic acid bacteria, replaced with *L. plantarum*, and *L. casei* was used, and also, similarly the end of lactic-acid-bacteria fermentation rice powder was obtained like the example 1.

[0033]

[Example 4] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice (4) As sugar, replaced with the fructose, and the glucose was used, and also, similarly the end of lactic-acid-bacteria fermentation rice powder was obtained like the example 1.

[0034]

[Example 5] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice (5) 10kg of polished rice was rinsed, it put into the fermentation tank with 40kg of liquid which made water distribute fructose 2% and lactic acid bacteria (*L. plantarum* 108 piece/ml), and lactic-acid fermentation was performed for three days at 37 degrees C to the bottom of nitrogen-gas-atmosphere mind. After fermentation termination, fermentation rice was rinsed and 8kg of this fermentation rice was re-distributed in 30kg of water except for the lactic acid, it ground until it became homogeneity mostly with the grinding machine, and lactic-acid-bacteria fermentation rice dispersion liquid were obtained.

[0035]

[Example 6] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice and a thickener (1)

2kg of lactic-acid-bacteria fermentation rice powder objects and 0.5kg of hyaluronic acid obtained in the example 1 were kneaded with 1.3-butylene-glycol 2.5kg, and the white paste was obtained.

[0036]

[Example 7] Preparation of the emulsifier which consists of lactic-acid-bacteria fermentation rice and a thickener (2)

2kg [ of lactic-acid-bacteria fermentation rice powder objects ] and xanthan gum 0.5kg obtained in the example 1 was kneaded with 1.3-butylene-glycol 2.5kg, and the white paste was obtained.

[0037]

[The example 1 of a comparison] 10kg of preparation polished rice of the lactic-acid-bacteria fermentation rice by the lactic-acid-bacteria fermentation of the rice under salt existence was rinsed, this was put into the fermentation tank 8% with 40kg of brine, and lactic acid bacteria (*L. casei* 108 piece/ml), and lactic-acid fermentation was performed for three days at 40 degrees C to the bottom of nitrogen-gas-atmosphere mind. Fermentation rice was separated after fermentation termination, and it dried at 50-60 degrees C, and adjusted to 15% or less of moisture, the air-current grinder ground, and the lactic-acid-bacteria fermentation rice powder end of salt content was obtained.

[0038]

[The example 1 of a formula] Cream [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Paraffin 5.0 Cetanol 2.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 1.3-butylene glycol 10.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous cream was obtained.

[0039]

[The example 2 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil



## 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 1.3-butylene glycol 10.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0040]

[The example 3 of a formula] Face toilet [A component] Section Olive oil 1.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 1.0 Ethanol 5.0 A glycerol 5.0 1.3-butylene glycol 5.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the face toilet of opalescence was obtained.

[0041]

[The example 4 of a formula] Essence [A component] Section Olive oil 1.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 2.0 Ethanol 5.0 Hyaluronic acid 0.3 1.3-butylene glycol 5.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the essence of opalescence was obtained.

[0042]

[The example 5 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The paste obtained in the example 7 2.5 A 1.3-butylene glycol 10.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0043]

[The example 6 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 2.0 A 1.3-butylene glycol 10.0 Xanthan gum 0.5 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky

lotion was obtained.

[0044]

[The example 7 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 A 1,3-butylene glycol 10.0 Kojic acid 2.0 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0045]

[The example 8 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 A 1,3-butylene glycol 10.0 Ascorbic-acid glycoside 2.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0046]

[The example 9 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 A 1,3-butylene glycol 10.0 Ascorbic-acid magnesium phosphate 3.0 methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0047]

[The example 10 of a formula] Milky lotion [A component] The section A liquid paraffin 5.0 Olive oil 4.0 Squalane 5.0 Butylparaben 0.1 [B component]

The lactic-acid-bacteria fermentation rice obtained in the example 1 5.0 A 1,3-butylene glycol 10.0 Arbutin 2.0 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, it cooled to 30 more degrees C or less, and the homogeneous milky lotion was obtained.

[0048]

[The example 11 of a formula] Treatment rinse [A component] The section Stearyl chloride trimethylammonium 5.0 Monostearin acid glyceryl 1.0 Cetanol 3.0 Octyl dodecanol 2.0 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 5.0 A 1,3-butylene glycol 5.0 The end of a hydrolysis collagen 0.5 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Perfume respectively B component was added, 0.3A component and B component were stirred for A component, after warming at 80 degrees C or more, and homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm). After cooling this to 50 degrees C, C component was added, stirring mixing was carried out, and it cooled to 30 more degrees C or less.

[0049]

[The example 12 of a formula] Hair dye and the color base [A component] The section Oxidation dye 3.5 Oleic acid 20.0 Stearin acid diethanolamide 3.0 polyoxyethylene (50) oleyl ether 1.0 [B component] The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 3.0 A 1.3-butylene glycol 10.0 Isopropanol 10.0 Aqueous ammonia (28%) 10.0 A sodium sulfite 0.5 Purified water respectively the whole quantity added B component, stirred the amount A component and B component used as the 100 sections for A component, after warming at 80 degrees C or more, and performed homogenize for 2 minutes by HISUKO TRON (5000rpm) further. It cooled to 30 degrees C or less, stirring this.

[0050]

[The example 13 of a formula] Liquid foundation [A component] The section Stearin acid 2.5 Cetanol 0.5 Monostearin acid glyceryl 2.0 Lanolin 2.0 Squalane 3.0 Myristic-acid isopropyl 8.0 Propylparaben 0.1 [B component] The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 3.0 Xanthan gum 0.3 A 1.3-butylene glycol 5.0 Triethanolamine 1.0 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component] Titanium oxide 8.0 Talc 4.0 Color pigment \*\* Amount [D component]

Perfume 0.3C components were mixed and the grinder ground. B component was mixed, C component ground to this was added, and homogeneity distribution was carried out by the colloid mill. In addition, homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm), stirring A component for A component and B which carried out homogeneity distribution, and C component for B and C component after warming at 80 degrees C, respectively. After cooling this to 50 degrees C, D component was added and stirring mixing was carried out, and it cooled to 30 degrees C or less, stirring further.

[0051]

[The example 14 of a formula] Cream foundation [A component] The section Stearin acid 5.0 Cetanol 2.0 Monostearin acid glyceryl 3.0 Liquid paraffin 5.0 Squalane 3.0 Myristic-acid isopropyl 8.0 Propylparaben 0.1 [B component]

The end of lactic-acid-bacteria fermentation rice powder it was obtained in the example 1 3.0 A sorbitol 3.0 A 1.3-butylene glycol 5.0 Triethanolamine 1.5 Methylparaben 0.1 Purified water Amount from which the whole quantity becomes the 100 sections [C component]

Titanium oxide 8.0 Talc 2.0 A kaolin 5.0 Bentonite 1.0 Color pigment \*\* Amount "D component]

Perfume 0.3C components were mixed and the grinder ground. B component was mixed, C component ground to this was added, and homogeneity distribution was carried out by the colloid mill. In addition, homogenize was further performed for 2 minutes by HISUKO TRON (5000rpm), stirring A component for A component and B which carried out homogeneity distribution, and C component for B and C component after warming at 80 degrees C, respectively. After cooling this to 50 degrees C, D component was added and stirring mixing was carried out, and it cooled to 30 degrees C or less, stirring further.

[0052]

[The example 1 of a trial] Emulsion stability The emulsion stability of the emulsification object obtained about commercial rice flour (regular rice powder) using these emulsifiers as the emulsifier of this invention of the one example 1, the emulsifier of the example 1 of a comparison, and an example 2 of a comparison was compared.

Eight sorts of emulsification objects which consist of components shown in the [test-method] table 1 were prepared, and those aging was observed.

[0053]

[Table 1]

(部)

成 分		試 料 №							
		本発明試料					比較試料		
		1	2	3	4	5	6	7	8
①	オリーブ油 流動パラフィン スクワラン パーセリン油	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
②	実施例 1 の乳化剤 比較例 1 の乳化剤 比較例 2 の乳化剤	2.0	5.0	5.0	5.0	5.0	2.0	5.0	5.0
③	精製水	67.8	64.8	64.8	64.8	64.8	67.8	64.8	64.8
④	1, 3 - B G	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
⑤	パラベン	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

[0054] That is, component \*\* was dissolved in component \*\*, and any one sort and component \*\* of the emulsifier of component \*\* were added to this, and it mixed, and heated at 80 degrees C. After, heating and homogenizing any one sort of the oily component of component \*\* the condition for [ 5000rpm x ] 2 minutes in addition at this at 80 degrees C, water cooling was carried out to the bottom of stirring, and it cooled to the room temperature. The emulsification object obtained here was put into the 50ml screw bottle, respectively, visual observation of the aging of the emulsification condition immediately after preparation and the emulsification condition when saving for three months at a room temperature or 40 degrees C was carried out, and the following criteria estimated.

O after :fitness O:one-month or more progress -- \*\*\*\* -- [0055] in which separation is slightly accepted after the \*\*:2 week when separation is accepted slightly - one-month progress and which carries out x:full separation A [result] result is shown in Table 2.

[Table 2]

試料No.		乳 化 状 態			備 考
		調製直後	室温保存	40℃保存	
本 発 明 試 料	1	◎	◎	◎	
	2	◎	◎	◎	
	3	◎	◎	◎	
	4	◎	◎	◎	
	5	◎	◎	◎	
比 較 試 料	6	◎	× <sup>注1</sup>	× <sup>注1</sup>	注 1 : 14日目に完全分離
	7	◎	◎	△ <sup>注2</sup>	注 2 : 17日目に僅かに分離
	8	◎	× <sup>注3</sup>	× <sup>注3</sup>	注 3 : 2日目に完全分離

[0056] The emulsification object (sample No.1, 2, 3, 4 and 5) obtained using the emulsifier of this invention as shown in Table 2 As opposed to giving an emulsification object stable also about which oily component of Table 1 for a long period of time by use of 2 or 5% of emulsifier In the case of the emulsifier of the example 1 of a comparison which performed lactic-acid-bacteria fermentation and prepared rice under existence of salt, phase separation was accepted from the 17th on the preservation conditions even 5% of use (sample No.7) of the stability of an emulsification object is not enough, and it is 40 degrees C from the first at whose times of 2% use (sample No.6). The emulsification object (sample No.8) obtained using the usual polished rice grinding object (rice flour of the example 2 of a comparison) which omits lactic-acid-bacteria fermentation is still more nearly lacking in emulsion stability.

[0057]

[The example 2 of a trial] Emulsion stability The effect of the emulsion stability on [ at the time of using a thickener together to the emulsifier of the 2 this inventions ] was investigated.

Four sorts of emulsification objects which consist of components shown in the [test-method] table 3 were prepared, and those aging was observed.

[Table 3]

(部)

成 分		試 料 №			
		1	2	3	4
①	オリーブ油	20.0	20.0	20.0	20.0
②	実施例 1 の乳化剤	1.0	1.0	1.0	1.0
③	精製水	68.8	68.7	68.3	68.3
④	1, 3 - B G	10.0	10.0	10.0	10.0
⑤	パラベン	0.2	0.2	0.2	0.2
⑥	キサンタンガム ヒアルロン酸		0.1	0.5	0.5

[0058] That is, component \*\* was dissolved in component \*\* and either of the component \*\*s was mixed to this. Independently, the mixture of component \*\* and \*\* was added to component \*\* after warming at 80 degrees C, respectively, and the mixture of component \*\* and \*\* and component \*\* were homogenized for 2 minutes by HISUKO TRON (5000rpm). After adding the mixture of above-mentioned component \*\*, \*\*, and \*\* to this and homogenizing for 1 more minute by HISUKO TRON (5000rpm), water cooling was carried out to the room temperature, stirring. The emulsification object obtained here was put into the 50ml screw bottle, respectively, visual observation of the aging of the emulsification condition immediately after preparation and the emulsification condition when saving for three months at a room temperature or 40 degrees C was carried out, and it evaluated in accordance with the same criteria as the example 1 of a trial.

[0059] A [result] result is shown in Table 4.

[Table 4]

試料№	乳 化 状 態		
	調製直後	室温保存	40℃保存
1	◎	○	○
2	◎	◎	◎
3	◎	◎	◎
4	◎	◎	◎

[0060] When a thickener is used together from the result of Table 4 to the emulsifier which consists of lactic-acid-bacteria fermentation rice, it turns out that the stability of the emulsification object obtained improves further.

[0061]

[The example 3 of a trial] When observed by addressing[ to 2000 mg/kg ]-administering each orally the emulsifier of this invention of the acute toxicity example 1 to five mouse sexes, neither the example of death nor the example of trouble was accepted.

[0062]

[The example 4 of a trial] About the emulsifier of this invention of the skin irritation example 1, skin irritation was investigated by the patch test.

[Sample] What kneaded the following component so that it might become JP hydrophilic petrolatum with 5% of concentration respectively was used as a sample.

- (1) The emulsifier of an example 1 (this invention sample)
- (2) Polyoxyethylene (20) sorbitan monooleate (comparison sample a)
- (3) Lipophilic type glyceryl monostearate (comparison sample b)
- (4) Oleic acid glycerol (comparison sample c)
- (5) Polyoxyethylene (5) lauryl ether (comparison sample d)

[0063] Five adult men of 20-50 years old of [test-method] age were made into the test subject, each overarm section inside was wiped by ethanol, sebum was removed, and what applied 0.2g of each samples to this part at the aluminum plate of a fin chamber was stuck. The fin chamber was removed 24 hours after and it judged by criteria in the approach list which describes extent of a stimulus of the skin below.

[0064] Based on the following "skin irritation criteria by the DOREIZU method", the visual judgment of the erythema of a pasting part and the situation of an edema was carried out 1 hour after after [judgment] patch removal, and 24 hours and 48 hours after, and five test subjects' average was calculated.

(Erythema)

score Condition 0 of the skin : with no erythema -- 1 : \*\*\*\* -- slight erythema 2 : Clear erythema 3 : Erythema 4 strong from whenever [ middle ] : Incrustation (edema) light to strong crimson erythema

score Condition 0 of the skin : with no edema -- 1 : \*\*\*\* -- slight edema 2 : Clear edema (distinction is clearly [ as a perimeter ] possible)

3 : Edema of whenever [ Middle ] (Climax of 1Mm or More)

4 : Strong Edema (it is Breadth Also to Perimeter Further)

[0065] A [result] result is shown in five tables.

[Table 5]

試料No	スコア [紅斑+浮腫 (合計)] (注)		
	1 時間後	2 4 時間後	4 8 時間後
(1)	0 + 0 ( 0 )	0 + 0 ( 0 )	0 + 0 ( 0 )
(2)	1.2 + 0.2 (1.4)	0.6 + 0 (0.6)	0 + 0 ( 0 )
(3)	0.8 + 0 (0.8)	0.2 + 0 (0.2)	0 + 0 ( 0 )
(4)	0.8 + 0.2 (1.0)	0.6 + 0 (0.6)	0 + 0 ( 0 )
(5)	2.2 + 0.8 (3.0)	1.2 + 0 (1.2)	0.2 + 0 (0.2)

(注) 5名の平均

[0066] Although the activator of a-d used as a comparison sample by the exam is said for safety to be comparatively high and is used widely by emulsification of cosmetics, the passage clear from the result of Table 5, the emulsifier of this invention has still less skin irritation than those activators, and is extremely excellent in safety.

[0067]

[The example 5 of a trial] About the milky lotion of the example 2 (lactic-acid-bacteria fermentation rice independent system) of a formula which blended the emulsifier of panel trial this invention, and the example 5 (lactic-acid-bacteria fermentation rice / thickener concomitant use system) of a formula, a

feeling of use and safeties (stimulative etc.) were evaluated by the real use test by the monitor.

[0068] [Test method] It evaluated the feeling of use when shifting a use stage and applying to a face gena for 2 times and five days separately every morning and evening about the milky lotion of the example 2 of a formula, and the example 5 of a formula, using as a panelist the 20 women of 20-40 years old of age who chose at random, stimulative, etc. for every following item. evaluation -- the condition of a feeling of use, and the skin -- five-step evaluation (A: -- good B: -- a little good C: -- usually -- D: -- a little bad E: -- bad) -- moreover, three-stage evaluation (A:stimulus nothing, those with B:sense of incongruity, C : stimulative) performed stimulative.

(Feeling of use)

\*\* Smoothness \*\* permeability at the time of elongation \*\* spreading at the time of feel \*\* spreading taken in its hand (feeling of osmosis)

\*\* The feel after spreading (condition of the skin)

\*\* The condition of the skin after spreading (stimulative)

\*\* The stimulus after stimulus \*\* spreading at the time of spreading [0069] A [result] result is shown in Table 6 and 7.

[Table 6]

(人)

評価項目		処方例 2					処方例 5				
		A	B	C	D	E	A	B	C	D	E
使用感	①	10	4	5	1	0	8	4	6	2	0
	②	9	4	5	2	0	12	5	3	0	0
	③	10	5	3	2	0	12	5	3	0	0
	④	10	6	4	0	0	9	5	4	2	0
	⑤	10	5	5	0	0	10	7	3	0	0
⑥肌の状態		12	3	5	0	0	13	4	3	0	0

[0070]

[Table 7]

(人)

評価項目	処方例 2			処方例 5		
	A	B	C	A	B	C
⑦塗布時の刺激	20	0	0	20	0	0
⑧塗布後の刺激	20	0	0	20	0	0

[0071] The milky lotion of the example 2 of a formula prepared using the emulsifier of this invention and the example 5 of a formula has all obtained high evaluation in a feeling of use, and a skin stimulus was not accepted at all, either, as shown in Table 6 and 7.



[Effect of the Invention] The emulsifier of this invention which consists of lactic-acid-bacteria fermentation rice uses [ are low toxicity, and excel in the safety to a man -- there are very few skin stimuli -- and ] for preparation of cosmetics and the various emulsification objects in the food field and is useful while it is equipped with the good emulsification force. Moreover, the emulsion stability of an emulsification object can be further increased by using together lactic-acid-bacteria fermentation rice and a thickener. Furthermore, its feeling of use is also good while the cosmetics which come to blend the emulsifier of this invention are excellent in emulsion stability and safety.

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[Translation done.]